

CLAIMS

What is claimed is:

- 1 1. In a server computer system having memory, a method of creating a class in
2 memory, wherein the class is used by the server computer system to create server-side objects
3 for dynamically rendering web page content, the web page content delivered to a client-side
4 computer system and displayed as a web page on the client computer system, said method
5 comprising:
 - 6 receiving a request from the client specifying a dynamic web page content file;
 - 7 processing the dynamic web page content file to produce a source code file containing
8 source code that represent control objects declared in the web page content file; and
 - 9 compiling the source code file to produce a class from which a set of hierarchical objects
10 can be instantiated to produce web page authoring language that produces a web page for display;
11 wherein the source code file declaratorily refers to one or more additional dynamic web
12 page content files, each reference to the one or more additional dynamic web page content files
13 correspond to a single hierarchical object within the set of hierarchical objects.
- 1 2. The method according to claim 1, wherein the source code file may be referenced
2 by a second source code file as one of the one or more additional dynamic web page content files.
- 1 3. The method as defined in claim 2, wherein the dynamic web page content file is a
2 server-side declaration datastore.

1 4. The method as defined in claim 2, wherein the class is stored in cache memory on
2 the server computer system and is available to instantiate objects in response to another request
3 specifying the dynamic web page content file.

1 5. The method as defined in claim 2, wherein the class is stored on a magnetic storage
2 medium and is available to instantiate objects in response to another request specifying the
3 dynamic web page content file.

1 6. The method as defined in claim 2, wherein the step processing the dynamic web
2 page content file comprises:

3 parsing the dynamic web page content file to store portions of the file into a data
4 model, the data model comprises a plurality of data objects linked in a hierarchical manner;

5 generating source code related to declaration information based on an analysis of
6 the data model during a first phase;

7 writing the source code related to declaration information to the source code file;

8 generating source code related to control object information based on an analysis

9 of the data model during a second phase; and

10 writing the source code related to control object information to the source code file
11 during the second phase;

12 where the one or more of the plurality of data objects correspond to compiled versions of
13 one or more additional dynamic web page content file.

1 8. A method as defined in claim 7, wherein the method further comprises:
2 generating source code related to rendering information based on an analysis of the
3 data model during a third phase; and
4 writing the source code related to rendering information to the source code file
5 during the third phase.

1 9. The method as defined in claim 2, further comprising the following:
2 prior to the step of processing the dynamic web page content file, determining whether
3 the class related to the received request has been compiled and stored in memory; and
4 if the class has been compiled and stored in memory, skipping the processing step,
5 otherwise continue with the processing step.

1 10. A computer data signal embodied in a carrier wave by a computing system having
2 memory and encoding a computer program for executing a computer process creating a class in
3 memory, wherein the class is used by the server computer system to create server-side objects
4 for dynamically rendering web page content, the web page content delivered to a client-side
5 computer system and displayed as a web page on the client computer system, said computer
6 process comprising:

7 receiving a request from the client specifying a dynamic web page content file;
8 processing the dynamic web page content file to produce a source code file containing
9 source code that represent control objects declared in the web page content file; and
10 compiling the source code file to produce a class from which a set of hierarchical objects

11 can be instantiated to produce web page authoring language that produces a web page for display;
12 wherein dynamic web page content file declaratorily refers to one or more additional
13 dynamic web page content files, each reference to the one or more additional web page content
14 files correspond to a single hierarchical object within the set of hierarchical objects.

1 11. A computer program storage medium readable by a computer system having
2 memory and encoding a computer program for executing a computer process creating a class in
3 memory, wherein the class is used by the server computer system to create server-side objects
4 for dynamically rendering web page content, the web page content delivered to a client-side
5 computer system and displayed as a web page on the client computer system, said computer
6 process comprising:

7 receiving a request from the client specifying a dynamic web page content file;
8 processing the dynamic web page content file to produce a source code file containing
9 source code that represent control objects declared in the web page content file; and
10 compiling the source code file to produce a class from which a set of hierarchical objects
11 can be instantiated to produce web page authoring language that produces a web page for display;
12 wherein dynamic web page content file declaratorily refers to one or more additional
13 dynamic web page content files, each reference to the one or more additional web page content
14 files correspond to a single hierarchical object within the set of hierarchical objects.

1 12. In a server computer system having memory, a method of creating a plurality of
2 web page responses having dynamically rendered web page content, the web page responses

3 delivered to one or more client-side computer systems and displayed as a web pages on the client
4 computer systems, said method comprising:

5 receiving a request from the client computer system for the web page, wherein the request
6 identifies a dynamic web page content file;

7 creating a hierarchical data model containing one or more control objects to store elements
8 of the dynamic web page content file;

9 generating a source code file related to the dynamic web page content file based on the
10 evaluation of the data model;

11 compiling the source code file to create a compiled class in memory;

12 returning a class reference to the server computer system enabling the server computer
13 system to instantiate server-side processing objects from that class to dynamically generate web
14 page content;

15 rendering the dynamic web page content into a web page response for delivery to the
16 client computer system;

17 conducting the web page response to the requesting client computer system;

18 receiving a second request for the web page for the web page, wherein the request
19 identifies a dynamic web page content file;

20 determining that a compiled class for that dynamic web page content file resides in
21 memory;

22 returning a class reference to the server computer system enabling the server computer

23 system to instantiate server-side processing objects from that class to dynamically generate web
24 page content;
25 rendering the dynamic web page content into a second web page response; and
26 conducting the second web page response to the requesting client computer system;
27 wherein the dynamic web page content file declaratorily refers to one or more additional
28 dynamic web page content files, each reference to the one or more additional dynamic web page
29 content files correspond to a single hierarchical object within the set of hierarchical objects.

1 13. A computer program storage medium readable by a computer system having
2 memory and encoding a computer program for executing a computer process creating a plurality
3 of web page responses having dynamically rendered web page content, the web page responses
4 delivered to one or more client-side computer systems and displayed as a web pages on the client
5 computer systems, said computer process comprising:
6 receiving a request from the client computer system for the web page, wherein the request
7 identifies a dynamic web page content file;
8 creating a hierarchical data model containing one or more control objects to store elements
9 of the dynamic web page content file;
10 generating a source code file related to the dynamic web page content file based on the
11 evaluation of the data model;
12 compiling the source code file to create a compiled class in memory;
13 returning a class reference to the server computer system enabling the server computer

14 system to instantiate server-side processing objects from that class to dynamically generate web
15 page content;
16 rendering the dynamic web page content into a web page response for delivery to the
17 client computer system;
18 conducting the web page response to the requesting client computer system;
19 receiving a second request for the web page for the web page, wherein the request
20 identifies a dynamic web page content file;
21 determining that a compiled class for that dynamic web page content file resides in
22 memory;
23 returning a class reference to the server computer system enabling the server computer
24 system to instantiate server-side processing objects from that class to dynamically generate web
25 page content;
26 rendering the dynamic web page content into a second web page response; and
27 conducting the second web page response to the requesting client computer system;
28 wherein the dynamic web page content file declaratorily refers to one or more additional
29 dynamic web page content files, each reference to the one or more additional dynamic web page
30 content files correspond to a single hierarchical object within the set of hierarchical objects.

1 14. A computer data signal embodied in a carrier wave by a computing system having
2 memory and encoding a computer program for executing a computer process creating a plurality
3 of web page responses having dynamically rendered web page content, the web page responses

4 delivered to one or more client-side computer systems and displayed as a web pages on the client
5 computer systems, said computer process comprising:
6 receiving a request from the client computer system for the web page, wherein the request
7 identifies a dynamic web page content file;
8 creating a hierarchical data model containing one or more control objects to store elements
9 of the dynamic web page content file;
10 generating a source code file related to the dynamic web page content file based on the
11 evaluation of the data model;
12 compiling the source code file to create a compiled class in memory;
13 returning a class reference to the server computer system enabling the server computer
14 system to instantiate server-side processing objects from that class to dynamically generate web
15 page content;
16 rendering the dynamic web page content into a web page response for delivery to the
17 client computer system;
18 conducting the web page response to the requesting client computer system;
19 receiving a second request for the web page for the web page, wherein the request
20 identifies a dynamic web page content file;
21 determining that a compiled class for that dynamic web page content file resides in
22 memory;
23 returning a class reference to the server computer system enabling the server computer

24 system to instantiate server-side processing objects from that class to dynamically generate web
25 page content;
26 rendering the dynamic web page content into a second web page response; and
27 conducting the second web page response to the requesting client computer system;
28 wherein the dynamic web page content file declaratorily refers to one or more additional
29 dynamic web page content files, each reference to the one or more additional dynamic web page
30 content files correspond to a single hierarchical object within the set of hierarchical objects.

1 15. A computer program product encoding a computer program for executing in a
2 computer system a computer process for creating a class in memory, wherein the class is used by
3 a server computer system to create server-side objects for dynamically rendering authoring
4 language elements, the elements are delivered to a client-side computer system and processed on
5 the client computer system, said process comprising:
6 receiving a request from the client computer system for the resource, wherein the request
7 identifies a dynamic web page resource;
8 processing the resource to generate a source code file related to the resource; and
9 compiling the source code file to create a compiled class in memory to enable the
10 instantiation of hierarchical objects of the compiled class;
11 wherein the source code file declaratorily refers to one or more dynamic web page content
12 files, each reference to the one or more dynamic web page content files correspond to a single
13 hierarchical object within the hierarchical objects.

1 16. A computer program product encoding a computer program for executing in a
2 computer system a computer process for creating a class in memory as defined in claim 15,
3 wherein the processing step of creating a data model comprises:

4 parsing the resource to separate the resource into logical elements and identify
5 relationships between the logical elements;

6 creating a plurality of hierarchically related data structures forming a hierarchical
7 data model; and

8 storing portions of the resource in the data structures.

1 17. A computer program product encoding a computer program for executing in a
2 computer system a computer process for creating a class in memory as defined in claim 15,
3 wherein the processing step comprises the following steps:

4 performing a first analysis of the resource to generate source code related to variable
5 declaration information;

6 performing a second analysis of the resource to generate source code related to control
7 object information;

8 performing a third analysis of the resource to generate source code related to rendering
9 information; and

10 storing the source code in the source code file.

1 18. A computer program product encoding a computer program for executing in a
2 computer system a computer process for creating a class in memory as defined in claim 16,

3 wherein the processing step of generating source code comprises further comprises the step of
4 generating an intermediate data structure, wherein the source code is generated from the
5 intermediate data structure.

1 19. A computer program product encoding a computer program for executing in a
2 computer system a computer process for creating a class in memory as defined in claim 18,
3 wherein the processing step of generating an intermediate data structure further comprises:

4 performing a first analysis of the resource to generate intermediate data structure elements
5 related to variable declaration information;

6 performing a second analysis of the resource to generate intermediate data structure
7 elements related to control object information;

8 performing a third analysis of the resource to generate intermediate data structure
9 elements related to rendering information; and

10 generating source code from the intermediate data structure.

1 20. A computer program product encoding a computer program for executing in a
2 computer system a computer process for creating a class in memory as defined in claim 20,
3 wherein the intermediate data structure is a generic description that may be translated into a
4 plurality of source code language files, wherein at least one source code file is different from
5 another source code language file.